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AUTHOR Garrott, Carl L.
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ABSTRACT

This study addressed two questions concerning subject-verb agreement and erroneous feature migration in French second language learners: whether multiple or single token items elicit greater errors in subject-verb agreement, and whether linear distance increases errors in agreement. Empirical research suggests that a mismatch in number between subject and verb occurs when the head noun is not proximate to the verb, particularly when a singular subject is combined with intervening relative clauses ending in a plural noun. There is little empirical research to support this view for French. The current study, using 40 college-level French second-language learners, found that (1) the condition SS + relative pronoun + V + N(plural) has a higher subject-verb error rate than other conditions; plural nouns may transmit number to the nearest verb even if the head noun is singular; and (2) erroneous feature migration and linear distance do correlate in this population, and learners who use a left-to-right probabilistic model to compute agreement appear to commit more errors. (MSE)

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ERRONEOUS FEATURE MIGRATION: SUBJECT-VERB AGREEMENT IN FRENCH USING LINEAR DIFFERENCES

CARL L. GARROTT

21 JUNE 1998
HAMPTON UNIVERSITY
MODERN FOREIGN LANGUAGES
HAMPTON, VIRGINIA

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ERRONEOUS FEATURE MIGRATION: SUBJECT-VERB AGREEMENT
IN FRENCH USING LINEAR DIFFERENCES

French and other Romance languages are morphologically rich languages Where aspect, mood, tense, person and number figure in creating meaning. The history of the French language consists of the elimination of flexions in favor of particles and syntax, and the movement from a synthetic to an analytical language. In the transition from Vulgar Latin to modern French, case ending and the neuter gender disappeared, periphrastic forms of the future and conditional gained favor, and rules of concord emerged (Ewert 1969). Rules of concord or agreement present a special problem in subject-verb relations because the subject (head noun or pronoun) can be separated by several words or phrases from the predicate. Making a verb agree in number with its subject and often making a pronoun agree in number with its antecedent present a challenge to language learners. Native speakers of English may hesitate in the following conditions:

Every one of us **is** invited to the party.

Buying a house and paying for it **present** an obstacle.

These sentences present problems to inexperienced writers who are unable to perform syntactic and morphological analyses of noun phrases. More complex sentences may have intervening clauses:

The teachers, who did not understand the issues the speaker presented to the audience, **were** bored.

A student who sometimes poses questions that provoke thought about the subject **is** appreciated by instructors.

English speakers must learn to recognize subject and predicate according to meaning, form and position.

Subject-verb agreement in French presents the same challenges to second language learners. Sentences with intervening clauses may induce errors because of the linear distance from the subject; intervening words may also induce errors:

Le réalisateur dont j'admire les films **est** Jean Renoir.

Les rêves des hommes qui ont lancé l'idée ne se **sont** pas tous réalisés.
Les années où il a tourné ce film **étaient** assez récents.
Elles nous **ont** cherché à la gare.

Research literature presents several articles specific to errors in processing subject-verb relationships in English. These articles examine errors as the result of tasks and conclude that there is a direct correlation between intervening clauses, linear distance and erroneous feature migration (Bock and Miller, 1991; Bock and Eberhard, 1993; Vigliocco, Butterworth and Garrett, 1995; Vigliocco, Butterworth and Semenza, 1995). Bock and Eberhard (1993) state that more errors occur when the head noun is plural. Nicol, Foster and Veres (1997) note that asymmetry differs cross-linguistically. This effect (error feature migration) is robust in English (Bock and Miller, 1991) and in Spanish (Anton-Méndez, 1996), yet insignificant in Italian (Vigliocco, Butterworth and Semenza, 1995). Although there is little empirical research, some evidence for the view that error feature migration in French may be robust in view of research in English and Spanish.

The research literature does suggest how subject-verb agreement may be computed in English. Nicol, Forster and Veres (1997) suggest that a left-to-right probabilistic model in which the occurence of each word is determined by the immediately preceding word or series of words may not apply to subject-verb agreement when there is a mismatch in number. They suggest that feature transmission is leftward and rightward : the subjects will analyze the intervening word or clause, then the head noun and finallly the verb. On the other hand, Nicol, Forster and Veres (1997) conclude that there are fewer errorrs in agreement when the linear distance between head noun and verb is increased dramatically. In English, singular nouns are unmarked and no feature is transmitted to the verb. On the contrary, plural nouns are marked predominately by the plural morphene /s/ or the allomorph /z/. **Deer, fish**

sheep have a zero allomorph; **men** involves a vowel replacer allomorph characteristic of Germanic languages. Intervening clauses or words in the plural may transmit directly to the predicate and the head noun is ignored (Bock and Miller, 1991).

Subject-verb agreement and verb morphology in French are more complex. First of all, in French the most frequent plural allomorph for substantives or nouns is a zero allomorph. Conjugational endings of verbs are marked in the orthographic system and less marked in speech. Bound morpheme markings of person and number are plentiful in comparison to English and several allomorphs exist. Linear distances between subject and predicate may complicate agreement. A mismatch between subject and verb may occur if there is a noun or pronoun proximate to the verb that is not the head noun. Furthermore, the plural definite article may not be retained in short term memory long enough to transmit to the verb or predicate.

The effect of subject and verb agreement, erroneous feature percolation, linear distance and intervening clauses in French remains largely untouched in applied linguistics. Research (Bock and Miller, 1991; Bock and Eberhard, 1993; Nicol, Forster and Veres, 1997; Vigliocco, Butterworth and Semenza, 1995) exist. The asymmetry effect has been investigated in Spanish (Anton-Méndez, 1996). Erroneous feature migration and linear distance using intervening clauses are not the subject of extensive empirical research specific to French. Therefore, the following research questions will be investigated in this study :

1. Do single or multiple token items elicit greater errors in subject-verb agreement in French?

2. Does linear distance increase errors in subject-verb agreement in French?

EXPERIMENT I

Students in French 202 (Intermediate French II) will write the correct verb form in complex sentences under two basic conditions : single token and multiple token. Single token items involve sentences in which the head noun is singular (SS) followed by a subordinate clause headed by a relative pronoun plus verb (V) plus noun (N); multiple token items consist of a plural subject (SP) followed by a subordinate clause headed by a relative pronoun plus verb (V) plus noun (N). Consequently four treatments are possible.

1) SS + relative pronoun + V + N (singular)
2) SS + relative pronoun + V + N (plural)
3) SP + relative pronoun + V + N (singular)
4) SP + relative pronoun + V + N (plural)

Previous research (Anton-Méndez, 1996; Bock and Miller, 1991; Bock and Eberhard , 1993) has determined that significantly more errors in subject-verb agreement occur when single token conditions exist with an intervening phrase with a plural noun. It is hypothesized that erroneous feature migration may occur in conditions in which short term memory of syntactic structures exhibit slippage (Nicol, Forster and Veres, 1997).

Method

Materials

Complex sentences were used in this investigation : one independent clause and one dependent clause in French. Each dependent clause was introduced by a relative pronoun (**qui,que** or **où**). The objective was to create 10 items per condition selected from a pool of 50 draft items. About 35 minutes of testing would be allowed in each test center or classroom. Forty items met the test of inter-rater validity (the extent to which three independent raters

agreed that the items had content validity).

Subjects

This investigation involved 40 subjects enrolled in French 202 selected randomly from a pool of 59 subjects in a small public university in the Southeast. The 40 subjects were assigned 10 each randomly to one of four treatments.

As per protocol on human investigations, subjects were briefed about the nature of this investigation and informed that data collected would be strictly confidential. Group and individual statistics would be coded and participation was voluntary. Individual scores would not be reported. Normal course assignments and testing would continue. Access to data would be limited to the investigator.

Procedure

At the beginnig of the period after midterm, subjects were informed that they were participating in an investigation on subject-verb agreement. The researcher and three assistants distributed the four treatments to subjects in a counter balanced design : subjects experienced each treatment. Upon completion of thirty-five minutes, the researacher ended each session. Scoring the task was a matter of counting the corrrect responses (subject-verb agreement) : one point per correct answer. Slight spelling errors were not counted as incorrect responses : responses that display correct subject-verb agreement counted . The maximum score on this task was 10 per treatment.

Results

The data was analyzed by means of a one-way Analysis of Variance (ANOVA) with four treatments as independent variables :

1) SS + relative pronoun + V + N (singular)
2) SS + relative pronoun + V + N (plural)

and subject-verb errors? If erroneous migration exists , as Experiment I suggests, there may be a linear distance of intervening phrases or clauses that elicit more errors : the greater the linear distance from the subject, the more likely the verb agreement error.

Method

Materials

Again the investigator constructed complex sentences for the tasks : one independent clause and one embedded dependent clause. Each dependent clause was introduced by a relative pronoun (**qui** or **que**). The investigator created a pool of 10 items for three treatments :

1) SP + relative pronoun + V
2) SP + relative pronoun + V + object pronoun
3) SS + relative pronoun + V + preposition + N (plural)

Subjects

Forty-two subjects participated in this investigation : 14 subjects per treatment group. Subjects were randomly assigned to treatment from the same pool of 59 students in French 202. Subjects were briefed about the structure of this investigation (sampling, data collection, method of data reporting and confidentiality). All subjects were informed that neither course grade nor normal course assignments were affected.

Procedures

This investigation began two weeks after Experiment I. The researcher and two assistants distributed the three treatments to subjects in a counter balanced design. The participants completed the tasks in 35 minutes. Scoring

the tasks was again a matter of counting responses that indicated subject-verb agreement : two points per correct response with a maximum score of 20.

Results

The subject means for Experiment II were 18.28, 13.21 and 13.43, respectively. The one-way Analysis of Variance (ANOVA) with three treatment groups displayed a very robust difference : $F(2,39) = 15.25$, $p < .01$, MSerror = 7.55; the critical value for alpha = .01 was 5.531. The post hoc comparison procedure, Tukey Test, indicated a strong significant difference between treatment 1 and the other treatments (greater linear distance) : Q (3,39). There was no significant difference between means in treatments 2 and 3.

Discussion

The question of the relationship between linear distance and subject-verb agreement errors was the import of Experiment II. The ANOVA results indicate significantly different means in treatment I and the treatments with greater linear distance from the subject. The results suggest that for L2 learners of French the computation of subject-verb agreement becomes more difficult with linear distance. Erroneous feature migration correlates with linear distance : agreement errors occur when intervening clauses or pronouns separate the head noun from the predicate. This investigation does not prove that increasing linear distance complicates computation of subject and verb agreement. This investigation does suggest that L2 learners of French may exhibit a left-to-right probabilistic model, that is, L2 learners may read as if the occurrence of each word is determined by the immediately preceding word or series of words.

Conclusion

In this study we addressed two questions relative to subject –verb agreement and erroneous feature migration in L2 learners of French :

1. Do multiple or single token items elicit greater errors in subject-verb agreement among L2 learners of French?
2. Does linear distance increase errors in subject-verb agreement among L2 learners of French?

Empirical research suggests that a mismatch in number between subject and verb occurs when the head noun is not proximate to the verb. Intervening words, phrases or clauses may cause erroneous feature migration (Bock and Miller, 1991; Bock and Eberhard, 1993; Vigliocco, Butterworth and Garrett, 1995; Vigliocco, Butterworth and Semaneza, 1995; Vigliocco and Nicol, 1997). Cross-linguistic studies confirm feature migration errors in English (Bock and Miller, 1991) , in Spanish (Anton-Méndez, 1996) yet not in Italian (Vigliocco, Butterworh and Semenza, 1995). Nicol, Forster and Veres (1997) found that interference may occur with a singular subject and an intervening plural noun proximate to the verb or predicate. According to these investigators, the error rate of subject-verb agreement tasks with intervening relative clauses ending in a plural noun was greater when the subject was singular.

While there is some evidence to support analogous results in French, there is little empirical research to support this view. Interpreting the evidence used in previous empirical research in English, Italian and Spanish, the present investigation using L2 learners of French follows. This investigation concludes :

1. The condition SS + relative pronoun + V + N(plural) has a higher subject-verb error rate that other conditions. Plural nouns may transmit number to the

nearest verb even if the head noun is singular.

2. Erroneous feature migration and linear distance do correlate among L2 learners of French. Learners who use a left-to-right probabilistic model to compute subject-verb agreement appear to commit more errors. This investigation did not prove that increasing linear distance augment error rates in L2 learners of French. At any rate, L2 learners may experience difficulty in separating head nouns from predicates and in demarcating boundaries for clauses. L2 learners of French may not understand semantic and syntactic relations within sentences. L2 learners of French may be conditioned to expect linear texts with a minimum of embedding, digressions and elaborations. L2 learners of French must learn to deal with adjective and adverb clauses, subject and antecedent agreement, subject and verb agreement, and inverted word order. For pedagogical reasons L2 learners may have to read leftward and rightward as syntax and morphology dictate. It is a frequent phenomenon in languages that the selection or understanding of words early in a sentence is determined by words coming later in the sentence.

RECOMMENDATIONS FOR FURTHER INVESTIGATION

1. Error feature migration : subject-verb agreement in German with embedded clauses introduced by relative pronouns (forms of **der** and **welcher**).

2. Is the computation of subject-verb agreement forward specifying or backward checking in French L2 learners after five semesters?

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